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# METHOD AND MEANS FOR STUFFING NATURAL CASINGS WITH SAUSAGE EMULSION

## BACKGROUND OF THE INVENTION

Stuffing sausages with meat emulsion normally involves pumping meat emulsion through a hollow tube or sleeve towards a discharge end of the sleeve. A hollow tubular casing material is slidably mounted on the outside of the sleeve with an otherwise open end extending just beyond the discharge end of the sleeve. The open end of the casing is then closed in any convenient manner. The meat emulsion extruded out of the sleeve enters the casing which becomes filled with the pressure on the pumped meat emulsion slidably moving the casing off of the sleeve. The filled casing is then formed into links through conventional means. This process works well with artificial casings which can be shirred or telescopically compressed so that a casing thirty feet or so in length can be compressed into a shirred condition of slightly more than a foot in length, thus allowing many sausages to be made before a new shirred casing is placed on the sleeve.

However, in the case of natural casings comprised of the intestines of certain animals, the sausage making process is substantially slowed because the natural casings vary in length and are substantially shorter than artificial casings. As a result, the natural casings have to be replaced at a high frequency, thus creating substantial down time for the machine.

It is therefore a principal object of this invention to provide a method and means for stuffing natural casings with sausage emulsion which will greatly accelerate the stuffing of natural casings by preloading the casings on a quickly positioned auxiliary sleeve so that the natural casing on the preloaded sleeve can be instantly placed on the primary stuffing tube without manually inserting the natural casing over the end of the stuffing tube.

A further object of this invention is to provide a convenient arrangement for retaining the sleeve to the stuffing tube as the sleeve is placed on the tube.

A still further object of this invention is to provide a convenient arrangement for the sleeve to be automatically removed from the stuffing tube after the natural casing has been filled with meat emulsion upon leaving the outer surface of the sleeve.

These and other objects will be apparent to those skilled in the art.

## SUMMARY OF THE INVENTION

A method of stuffing natural casings with sausage material involves taking a plurality of natural casings of different lengths and diameters; pre-loading each of the casings on elongated hollow open ended sleeves shorter than the casings and having a diameter less than the casings by telescoping the casings on the outer surfaces of the sleeves, and tying an open end of the casings over the open ends of the sleeves; slidably mounting the sleeves on the open end of a meat stuffing tube of a sausage encasing machine; extruding meat emulsion through the stuffing tube into the casing mounted on the sleeve until the sleeve is slidably removed from the tube caused in part by the movement of meat emulsion entering the casing; removing the sleeve from the stuffing tube, repeating the use of the sleeve by preloading the sleeve with another natural casing; and sequentially

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filling the casings on the preloaded sleeves with meat emulsion in accordance with the foregoing steps.

A natural casing sausage making machine has a frame, a meat emulsion pump, and a hollow stuffing tube connected to the pump and having a discharge end. A hollow open-ended sleeve is slidably mounted on the stuffing tube and has a discharge end registering with the discharge end of the stuffing tube. The sleeve is preloaded with a length of natural casing, which extends over at least a portion of the length of the sleeve. A radial flange on the end of the sleeve opposite the discharge end thereof abuts a radial flange or other stop element on the stuffing tube to automatically insure that the discharge end of the sleeve and tube register with each other. A detent element, preferably an annular radial groove in the stuffing tube can receive a registering annular rib on the inner diameter of the sleeve to yieldingly hold the sleeve in place in the time.

After the preloaded sleeve is in place on the stuffing tube, the tube is conventionally moved longitudinally forwardly towards a twisting and linking mechanism. When the casing is filled, the tube with the sleeve thereon is longitudinally moved away from the twisting and linking mechanism. A means for withdrawing the stuffing tube from the sleeve, such as a pivotal brake element is moved into the reverse longitudinal path of the radial flange of the sleeve to prevent it from moving rearwardly, whereupon the tube slidably withdraws from inside the sleeve, and the sleeve automatically drops to a suitable container for reuse without having to be handled by the machine operator.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a longitudinal sectional view through a preloaded sleeve mounted on a stuffing tube of this invention;

FIG. 2 is a longitudinal sectional view similar to FIG. 1 but shows an alternate form of preloaded sleeve;

FIG. 2A is a partial elevational view at an enlarged scale showing the lefthand end of the stuffing tube in FIG. 2;

FIG. 2B is an enlarged scale sectional view of the lefthand end of the sleeve in FIG. 2;

FIG. 2C is a perspective view of the sleeve of FIG. 2 rotated 90 degrees to more fully illustrate its construction;

FIG. 3 is an end elevation of the device of FIG. 2 as viewed from the righthand end of FIG. 2 with the casing of FIG. 2 not being shown for clarity purposes;

FIG. 4 is a view similar to that of FIG. 1 but shows a brake element in place to facilitate removal of the sleeve from the tube;

FIG. 5 is an end elevational view of FIG. 4 as seen from the lefthand of FIG. 4; and

FIG. 6 is a plan view of the basic components of a sausage making machine.

## DESCRIPTION OF THE EMBODIMENTS OF THE INVENTION

With reference to FIG. 6, a conventional sausage making machine 10 has a frame 11, a pump 12 connected to a source of meat emulsion (not shown), a twisting mechanism 16, a linking mechanism 18, a discharge horn 20, and a conveyor 22.

With reference to FIGS. 1, 2 and 4, the stuffing horns 14 (FIGS. 1 and 4) and 14A (FIG. 2) have an annular flange 24 extending radially outwardly at a location spaced from their discharge ends 26. As best shown in FIG. 2A, horn 14A has an annular groove 28 formed therein immediately forwardly of the flange 24.